

Notice of Allowability

Application No.

10/642,657

Examiner

John Ruggles

Applicant(s)

KOIKE ET AL.

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the 12/27/05 amendment.
2. ☒ The allowed claim(s) is/are 1-5, 8-10 and 15.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

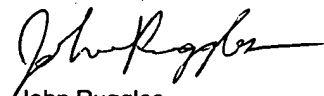
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


John Ruggles
Examiner, Art Unit 1756
571-272-1390

Art Unit: 1756

Response to Amendment

In the submission filed on 12/27/05, claims 1-2, 4, and 8-9 have been currently amended, claims 3 and 10 remain as originally filed, claims 6-7 and 11-14 remain withdrawn as previously non-elected, and new claim 15 has been currently added. Therefore, only claims 1-5, 8-10, and 15 are under consideration.

All previous objections and rejections are withdrawn in view of (A) the current amendment with accompanying remarks filed by Applicants on 12/27/05 and (B) the examiner's amendment shown below.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Attorney Carl Pellegrini for Alan Kasper on 2/2/06.

The application has been amended as follows:

IN THE SPECIFICATION:

Amend the title as follows: --METHOD OF PRODUCING A GLASS SUBSTRATE FOR A MASK BLANK, METHOD OF PRODUCING A MASK BLANK, AND METHOD OF PRODUCING A TRANSFER MASK[[,]]~~METHOD OF PRODUCING A SEMICONDUCTOR~~

Art Unit: 1756

~~DEVICE, GLASS SUBSTRATE FOR A MASK BLANK, MASK BLANK, AND TRANSFER MASK --.~~

Amend the abstract beginning at line 2 to add text in accordance with the following: --
...a polishing liquid having a pH value between 7.0 and 7.6 that ~~containing~~ contains abrasive grains, and the abrasive grains include colloidal silica abrasive grains produced by hydrolysis of an organosilicon compound. The polishing process includes a surface roughness control step for initially finishing the surface of the glass substrate to a predetermined surface roughness by moving a polishing member and the glass substrate relative to each other under a predetermined pressure. This is followed by a protrusion suppressing step, carried out immediately before the end of the polishing process, under a pressure lower than the predetermined pressure, to minimize polishing rate and suppress occurrence of a fine convex protrusion. A mask blank and then a transfer mask are formed from this polished glass substrate. --.

At page 12 line 22, change "0 g/cm² or less" to --0 g/cm² ~~or less~~ --.

At page 21 line 7, correct the spelling of "quarts" to --quartz--.

IN THE CLAIMS:

In claim 2 line 4 and in claim 4 line 6, change "liquid comprise" to --liquid comprises--, at both occurrences.

Cancel claims 6-7 and 11-14 (which were all previously withdrawn as non-elected).

In claim 15 line 2, change "0.12 µm/min or" to --0.12 µm/min or less. -- (to complete the sentence in accordance with embodiment 4 described in the original specification at page 12 lines 4-5).

Allowable Subject Matter

Claims 1-5, 8-10, and 15 are allowed.

The following is an examiner's statement of reasons for allowance: the prior art does not specifically teach all the limitations of claims 1, 2, and 4, as currently amended.

In particular, the prior art does not specifically teach a method of producing a glass substrate for a mask blank, in which a surface of the glass substrate is polished by the use of a polishing liquid that comprises colloidal silica abrasive grains and has a pH value between 7.0 and 7.6 (in claims 1 and 2). The prior art also does not specifically teach a method of producing a glass substrate for a mask blank comprising a process of polishing a surface of the glass substrate by the use of a polishing liquid comprising colloidal silica abrasive grains and wherein the polishing process comprises: a surface roughness control step of finishing the surface of the glass substrate to a predetermined surface roughness by moving a polishing member and the glass substrate relative to each other while the polishing member is pressed against the surface of the glass substrate under a predetermined pressure, and a protrusion suppressing step, following the surface roughness control step, of controlling to a pressure lower than the predetermined pressure in order to minimize a polishing rate and suppressing occurrence of a fine convex protrusion generated immediately before an end of the polishing process by moving the polishing member and the glass substrate relative to each other, and wherein the surface roughness control step and the protrusion suppressing step constitute a series of steps in the polishing process and the protrusion suppressing step is carried out immediately before the end of the polishing process (in claim 4). Therefore, claims 1, 2, and 4 are now allowable over the prior art and claims 3, 5,

Art Unit: 1756

8-10, and 15 are also now allowable over the prior art (due to their dependence on independent claims 1, 2, and 4).

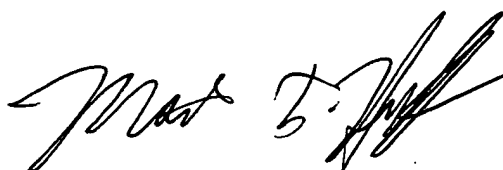
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

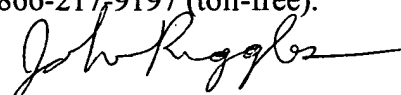
Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Ruggles whose telephone number is 571-272-1390. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MARK F. HUFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700



John Ruggles
Examiner
Art Unit 1756